REPLACEMENT CLAIMS

51. (Twice Amended) An integrated circuit comprising:

a semiconductor substrate including a first region of a predefined conductivity type;

a plurality of active regions provided within said first region;

a field isolation region separating at least two of said active regions, wherein said field isolation region includes an isolation trench, said isolation trench further including a first area filled with a first dielectric material forming at least sidewalls of said isolation trench, and a second area filled with a second dielectric material situated within said sidewalls, wherein said first dielectric material and said second dielectric material are different; and

a doped region within said first region below said second area, said doped region being of said predefined conductivity type and having a doping concentration higher than a doping concentration of said first region, wherein additional dopants in said doped region causing said higher doping concentration are displaced away from said separated active regions and wherein said additional dopants are implanted into the substrate below said first area filled with said first dielectric material to a depth in a range of about 10 to 100 percent the depth of said first area filled with said first dielectric material.

52. (Twice Amended) An integrated circuit comprising:

a semiconductor substrate including a first region of a predefined conductivity type;

a plurality of active regions provided within said first region;

a field isolation region separating at least two of said active regions, wherein said field isolation region includes an isolation trench, said isolation trench further including a first area filled with a first dielectric material forming at least sidewalls of said isolation trench, and a second area filled with a second dielectric material situated within said sidewalls, wherein said first dielectric material and said second dielectric material are different; and

E1 and

a doped region within said first region below said second area, said doped region being of said predefined conductivity type and having a doping concentration higher than a doping concentration of said first region, wherein additional dopants in said doped region causing said higher doping concentration are displaced away from said separated active regions and wherein said additional dopants are implanted into the substrate below said first area filled with said first dielectric material to a depth in a range of about 20 to 80 percent the depth of said first area filled with said first dielectric material.

68. (Twice Amended) An integrated circuit comprising:

and G1

a semiconductor substrate including a first region of a predefined conductivity type;

a plurality of active regions provided within said first region;

E2 cont'd

a field isolation region separating at least two of said active regions, wherein said field isolation region includes an isolation trench having a depth of about 3500 Angstroms, said isolation trench further including a first area filled with a first dielectric material forming at least sidewalls of said isolation trench, and a second area filled with a second dielectric material situated within said sidewalls, wherein said first dielectric material and said second dielectric material are different; and

a doped region within said first region below said second area, said doped region being of said predefined conductivity type and having a doping concentration higher than a doping concentration of said first region, wherein additional dopants in said doped region

E2 end

causing said higher doping concentration are displaced away from said separated active regions.

73. (Twice Amended) A memory device comprising:

Sub F1

a semiconductor substrate including a plurality of doped active regions;

E3

a field isolation region separating at least two of said active regions, said field isolation region including an isolation trench, said isolation trench further including a first area filled with a first dielectric material forming at least sidewalls of said isolation trench, and a second area filled with a second dielectric material situated within said sidewalls, said first dielectric material being different than said second dielectric material; and

an ion implanted region provided below said second area having an increased doping concentration in an area of said substrate between said separated active regions, said increased doping concentration being higher than a doping concentration of said first area, wherein substantially all ions from said ion implanted region which increase said doping concentration are displaced away from said active regions by a distance at least equal to a sidewall thickness of said first area filled with said first dielectric material.